

WHAT IS CLAIMED IS:

1. A method for allocating data to a plurality of general purpose registers in a CPU for a plurality of execution environments, whereby programs executed under
5 said execution environments includes a first program for implementing a user-specific function and a second program for unifying said plurality of execution environments, comprising:
- allocating a data area in RAM for storing environmental information of said second program;
- 10 assigning one of said plurality of general purpose registers for storing a pointer of the environmental information in the RAM; and
- compiling the first program for at least one of said plurality of execution environments.
- 15 2. The method for allocating data to a plurality of general purpose registers in a CPU for a plurality of execution environments according to claim 1, whereby the number of parameters defining the environmental information is equal to or bigger than the number of general purpose registers.
- 20 3. The method for allocating data to a plurality of general purpose registers in a CPU for a plurality of execution environments according to claim 1, whereby the number of reserved general purpose registers is equal to or bigger than the number of actually used general purpose registers.

4. The method for allocating data to a plurality of general purpose registers in a CPU for a plurality of execution environments according to claim 3, further comprising a step of defining arguments for passing information on at least one task
5 for implementing the first program, said arguments comprise:

an address of a memory location for storing an identifier for controlling and managing said task;

a start address of an execution routine for implementing said task;

a priority level assigned to said task to occupy the RAM; and

10 a start address of a memory area for storing a said parameters.

5. The method for allocating data to a plurality of general purpose registers in a CPU for a plurality of execution environments according to claim 3, whereby said parameters include at least one of:

15 a task attribute of at least one task for implementing the first program;

an upper-limit time for said task to be executed;

a size of a stack required by said task;

a stack base pointer which points to a location in said stack when said task is activated;

20 a CPU mode value indicating whether or not said task requires the CPU employed the RAM to execute a multimedia instruction;

an address of a memory area for storing a name of said task; and

a start address of a memory area for storing task information to be passed to the CPU at activation of said task.

6. A method for allocating data to a plurality of general purpose registers in a CPU for a plurality of execution environments according to claim 1, whereby the first program is compiled simultaneously for at least two of said plurality of execution environments.

7. A method for allocating data to a plurality of general purpose registers in a CPU for a plurality of execution environments according to claim 1, whereby the method is implemented by a computer.

8. A computer program product for allocating data to a plurality of general purpose registers in a CPU for a plurality of execution environments, wherein programs executed under said operation systems includes a first program for implementing a user-specific function and a second program for unifying said plurality of execution environments, comprising:

a module for allocating a data area in RAM for storing environmental information of said second program;

a module for assigning one of said plurality of general purpose registers for storing a pointer of the environmental information in the RAM; and

a module for compiling the first program for at least one of said plurality of execution environments.

9. An integrated circuit comprising:

a CPU having a plurality of general-purpose registers;

a memory; and

5 a device for allocating data to a plurality of general purpose registers in the CPU for a plurality of execution environments, wherein programs executed under said execution environments includes a first program for implementing a user-specific function and a second program for unifying said plurality of execution environments, comprising:

10 means for allocating a data area in RAM for storing environmental information of said second program;

means for assigning one of said plurality of general purpose registers for storing a pointer of the environmental information in the RAM; and

15 means for compiling the first program for at least one of said plurality of execution environments.

10. The integrated circuit according to claim 9, wherein the number of parameters defining the environmental information is bigger than the number of general purpose registers.